

5.3 REACTOR CORE

APPLICABILITY

Applies to the reactor core.

OBJECTIVE

To define those design features which are essential in providing for safe reactor core operations.

SPECIFICATION

a. Fuel Assemblies

The reactor shall contain 121 fuel assemblies. Each assembly shall consist of a matrix of zircaloy clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO₂) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead-test-assemblies that have not completed representative testing may be placed in non-limiting core regions. Lead-test-assemblies shall be of designs approved by the NRC for use in pressurized water reactors and their clad materials shall be the materials approved as part of those designs.

b. Control Rod Assemblies

The reactor core shall contain 29 control rod assemblies. The control material shall be silver indium cadmium.

5.4 FUEL STORAGE

APPLICABILITY

Applies to the capacity and storage arrays of new and spent fuel.

OBJECTIVE

To define those aspects of fuel storage relating to prevention of criticality in fuel storage areas.

SPECIFICATION

a. Criticality

1. The spent fuel storage racks are designed and shall be maintained with the following:
 - a. Fuel assemblies having a maximum enrichment of 56.067 grams Uranium-235 per axial centimeter
 - b. $k_{\text{eff}} < 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties
2. The new fuel storage racks are designed and shall be maintained with:
 - a. Fuel assemblies having a maximum enrichment of 56.067 grams Uranium-235 per axial centimeter
 - b. $k_{\text{eff}} < 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties
 - c. $k_{\text{eff}} < 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties
3. The spent fuel pool is filled with borated water at a concentration to match that used in the reactor REFUELING cavity and REFUELING canal during REFUELING OPERATIONS or whenever there is fuel in the pool.

b. Capacity

The spent fuel storage pool is designed with a storage capacity of 1205 assemblies and shall be limited to no more than 1205 fuel assemblies.

c. Canal Rack Storage

Fuel assemblies stored in the canal racks shall meet the minimum required fuel assembly burnup as a function of nominal initial enrichment as shown in Figure TS 5.4-1. These assemblies shall also have been discharged prior to or during the 1984 REFUELING outage.